

New project explores impact of biodiversity loss on well-being in Africa

Lack of access to global data on biodiversity loss and its impact on people is a major barrier to tackling the issue in Africa. To address this knowledge gap, Dr Hayley Clements, an interdisciplinary conservation researcher at Stellenbosch University's Centre for Complex Systems in Transition, is leading a project entitled 'Quantifying the biodiversity planetary boundary for Africa'.



Dr Hayley Clements, recipient of the inaugural Jennifer Ward Oppenheimer (JWO) Research Grant

Africa has a wealth of biodiversity, with unique and varied ecosystems that include biodiversity hotspots such as the Guinean forests of West Africa, the Cape Floristic Region and Succulent Karoo of South Africa, the coastal forests of eastern Africa, and Afromontane regions across the continent. "These natural resources provide a range of essential products and services on which we depend," says Clements.

"These 'ecosystem services' include clean air and water, prevention of floods, pollination of plants, pest and disease control and prevention of soil erosion. At a more fundamental level, ecosystems provide livelihoods, food, shelter and overall well-being for the continent's growing population. In short, everything we need to sustain and improve our lives depends on the natural environment," he explains.

Impact of economic development on natural systems

However, Africa also has the one of the highest GDP growth rates of any region, with increasing urbanisation and agricultural expansion taking a heavy toll on natural systems. Exploitation, habitat destruction, pollution, deforestation, and effects of climate change are just some of the factors driving high rates of biodiversity loss on the continent, at a pace more rapid than ever before in human history.

Says Clements, "A continuous decline in species along with a loss of habitat negatively affects the potential for biodiversity to sustain itself and human well-being. So the question is, how does Africa support socio-economic growth, yet still conserve the natural resources on which it depends?"

Securing a more just and sustainable future

To ensure this information is relevant to the issues at hand, decision-makers and biodiversity professionals need to engage and work with one another openly and constructively. This information needs to be readily available, not just to experts in the field, but to the general public to raise awareness on how biodiversity loss influences our human existence and what steps can be taken to secure a more just and sustainable future. The initiative has the ambitious goal of finding ways to measure the state of Africa's biodiversity at a local level in response to human activities. This will be done using a measure called the 'Biodiversity Intactness Index' or BII. It will also explore the links between biodiversity loss and human well-being to make compelling cases for appropriate land use decision-making.

Clements' project is funded by the Jennifer Ward Oppenheimer Research Grant, which is awarded annually by Oppenheimer Generations to support an African-led research programme that has the potential to significantly contribute to the advancement of environmental and allied sciences – specifically to identify and address real-world issues that affect Africa. "With this scientific evidence, as well as a heightened awareness of biodiversity loss, effective strategies and efforts

can be put in place to move forward on a sustainable development agenda not only in Africa but globally – for the benefit of humankind,” explains Clements.

Progress made on the project will be presented at the 11th Oppenheimer Research Conference in Midrand, Gauteng from 6-8 October 2020, which brings together select individuals and organisations that are involved in the fields of natural and environmental science.

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